

CLAIMS

We claim:

1. An imaging device with white balance adjustment, comprising:
image capture circuitry configured to produce captured image signals;
5 means for adjusting white balance in the captured image signals; and
means for adapting the means for adjusting white balance by calibrating a non-
standard target image to a standard target image;
2. The imaging device of claim 1, wherein the image capture circuitry
includes a detector selected from the group consisting of a CCD detector array and a
10 CMOS detector array.
3. The imaging device of claim 2, wherein the means for adjusting white
balance include signal processing circuitry capable of changing variable gain
coefficients enabled on the charge coupled device array.
4. The imaging device of claim 3, wherein the means for adapting the
15 means for adjusting comprises an algorithm for relating a field image of a non-
standard target to a primary image of a standard target.
5. The imaging device of claim 4, wherein the algorithm is operable for:
determining at least one variable gain coefficient for the field image,
determining at least one variable gain coefficient for the primary image,
20 relating the variable gain coefficient for the field image to the variable gain
coefficient for the primary image to produce an adjusted variable gain
coefficient, and
supplying the adjusted variable gain coefficient to the means for adjusting
white balance.
- 25 6. The imaging device of claim 1, wherein the means for adjusting white
balance implements an algorithm that relates a primary image obtained from a
standard calibration target to a field image obtained from a non-standard calibration
target.

7. The imaging device of claim 6, wherein the non-standard calibration target is selected from the group consisting of a palm, a wallet, and a camera lens cover.

8. A method for adjusting white balance in an imaging device, the
5 method comprising the steps of:
capturing image signals from a field image of a non-standard calibration target
and a primary image of a standard calibration target to produce a
captured field image and a captured primary image;
relating the captured field image to the captured primary image to provide
10 calibration for adjustment of white balance; and
adjusting white balance in the captured field image by applying the
calibration.

9. The method of claim 8, wherein the step of adjusting white balance comprises enabling an adjusted variable gain coefficient on a variable gain amplifier.

15 10. The method of claim 9, wherein the step of enabling an adjusted variable gain coefficient comprises calculating a relationship between a variable gain coefficient for the field image and a variable gain coefficient for the primary image.

11. The method of claim 10, wherein the step of calculating includes;
determining at least one variable gain coefficient for the field image,
20 determining at least one variable gain coefficient for the primary image,
relating the variable gain coefficient for the field image to the variable gain coefficient for the primary image to produce the adjusted variable gain coefficient, and
supplying the adjusted variable gain coefficient to signal processing circuitry
25 for use in normal photography.

12. The method of claim 8, wherein the step of capturing image signals includes capturing the field image from the non-standard calibration target selected from the group consisting of a palm, a wallet, and a camera lens cover.

13. An imaging device with white balance adjustment, comprising:

image capture circuitry configured to produce captured image signals;
a stored representation of a primary image of a standard target useful for
calibrating white balance adjustment;
a stored representation of a secondary image of a non-standard target useful
5 for calibrating white balance adjustment; and
white balance processing circuitry that adjusts white balance by relating the
stored representation of the primary image to the stored representation
of the secondary image.

14. The imaging device of claim 13, wherein the image capture circuitry
10 includes a detector selected from the group consisting of a CCD detector array and a
CMOS detector array.

15. The imaging device of claim 14, wherein the white balance processing
circuitry includes signal processing circuitry capable of changing variable gain
coefficients enabled on the CCD array.

16. The imaging device of claim 1, wherein the white balance processing
15 circuitry is operable for
determining at least one variable gain coefficient for a field image,
determining at least one variable gain coefficient for the primary image,
relating the variable gain coefficient for the field image to the variable gain
20 coefficient for the primary image to produce an adjusted variable gain
coefficient, and
supplying the adjusted variable gain coefficient to the means for adjusting
white balance.

17. The imaging device of claim 1, wherein the white balance processing
25 circuitry implements an empirical algorithm relating the stored representation of the
primary image to the stored representation of the secondary image.